

Remarks/Arguments

Claims 1-16 were pending in this application. By way of the above amendments, claims 11-16 are withdrawn, claims 1, 2, 4, and 10 are amended, and claims 17-22 are added; accordingly, claims 1-10 and 17-22 are pending. Within the Office Action, claims 1-3 and 5-10 are rejected under 35 U.S.C. § 102(e), claims 1-6, 8, and 10 are rejected under 35 U.S.C. § 102(b), and claims 1-10 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting. In light of the remarks made below, the Applicant respectfully requests reconsideration.

Withdrawal of claims 11-16

The Examiner had restricted examination of the claims to either the group of claims 1-10 or the group of claims 11-16. During a telephone conversation with the Examiner, the Applicant's attorney elected, with traverse, to prosecute claims 1-10. The Applicant affirms this election by withdrawing claims 11-16 by the above amendments.

Rejections under 35 U.S.C. § 102(e)

Within the Office Action, claims 1-3 and 5-10 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,921,456 to Biberger et al. In light of the amendments made above, these rejections are now moot.

Biberger is directed to a high pressure chamber that uses a single mechanical drive mechanism to form and maintain a wafer cavity. Referring to Figure 3 of Biberger, the wafer cavity 44 is formed by venting a pneumatic cavity 60 and pressurizing a hydraulic cavity 58 to drive a wafer platen 34 into a spacer/injection ring 42. (Biberger, col. 4, lines 16-20). In Figure 6, Biberger discloses an alternative embodiment that also includes a pneumatic cylinder 86 contained within a hollow portion of a piston neck 56A. Biberger recognizes that, for the processing cavity to be maintained during processing, the fluid within the hydraulic cavity 58 must be maintained at a pressure greater than that of the pressurized fluid within the wafer cavity 44. (*Id.*, lines 23-28) Biberger, however, does not teach maintaining *within a selected range* a difference between a *force* generated within the wafer cavity and a *force* that maintains the wafer cavity, as recited in the claims of the present invention.

Claim 1 is directed to an apparatus for processing a semiconductor wafer. The apparatus comprises, in part, a seal energizer configured to maintain an upper element against a lower element to maintain a processing volume. The seal energizer accomplishes this by maintaining

within a selected range a difference between a sealing force and a force generated within the processing volume. Claim 10 recites a similar element using means-plus-function language. Biberger does not teach maintaining a processing volume by keeping a difference between forces within a selected range. For at least this reason, claims 1 and 10 are both allowable over Biberger.

Claims 2, 3, and 5-9 and the new claims 17-21 all depend on claim 1. Because claim 1 is allowable over Biberger, claims 2, 3, 5-9 and 17-21 are all also allowable as depending on an allowable case claim.

Rejections under 35 U.S.C. § 102(b)

Within the Office Action, claims 1-6, 8, and 10 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 2,873,597 to Fahringer. In light of the amendments made above, these rejections are now moot.

Fahringer is directed to pressure seals for pressure vessels used to process textile materials under high pressures. Referring to Figure 1, Fahringer discloses an apparatus comprising a pressure vessel 10 having a lid 14 and compartments 40. The lid 14 is kept in place by generating a pressure within the compartments 40, thereby generating a downward force on sealing rollers 31. Fahringer does not disclose maintaining a pressure differential between the pressure vessel 10 and the compartments 40 (col. 4, lines 53-56). Fahringer does not, however, disclose “maintaining within a selected range a difference between a force generated within a processing volume and a sealing force,” as recited in the independent claims 1 and 10 of the present invention. As explained in the Specification, maintaining a force differential is different from maintaining a pressure differential. (See, e.g., Specification at page 27, lines 11-12). Fahringer’s discussion of maintaining a pressure differential is thus different from maintaining a force differential.

Contrary to what is stated in the Office Action, Fahringer does not disclose a “seal energizer 43, which *intensifies* a first pressure to produce a sealing pressure larger than [a] first pressure, the sealing pressure used to generate the sealing force” (italics added). Instead, Fahringer discloses a “pressure *reducing* valve 44” (Fahringer, col. 4, lines 22, italics added) that couples the vessel 10 to the compartments 40. Fahringer explains that the pressure reducing valve 44 works to decrease the pressure in the compartment 40 so that the pressure is directed from the vessel 10 into the compartments 40 and not vice versa. (*Id.*, col. 4, lines 45-49)

As explained above, the independent claims 1 and 10 recite, in structural and means-plus-

function language respectively, a seal energizer that maintains within a selected range a difference between a sealing force and a force generated within the processing volume. Fahringer does not disclose this element. For at least this reason, claims 1 and 10 are allowable over Fahringer.

Claims 2-6 and 8 and the new claims 17-21 all depend on claim 1. Because claim 1 is allowable over Fahringer, claims 2-6, 8, and 17-21 are all also allowable as depending on an allowable base claim.

Rejection under the judicially-created obviousness-type double patenting

Within the Office Action, claims 1-10 are provisionally rejected under the judicially-created obviousness-type double patenting as being unpatentable over the claims 1-12 and 24 of the co-pending U.S. Patent Application No. 10/364,284 (the '284 application). These rejections are now moot because, as amended, the independent claims in this application are clearly distinguishable over claims 1-12 and 24 of the '284 application.

The new claim 22 is allowable

The new claim 22 recites, in part, "means for maintaining the processing volume by determining the variable processing pressure and generating a sealing pressure that varies non-linearly with the processing pressure." Neither Biberger nor Fahringer discloses this element. For at least this reason, claim 22 is allowable over both Biberger and Fahringer.

No new matter has been added

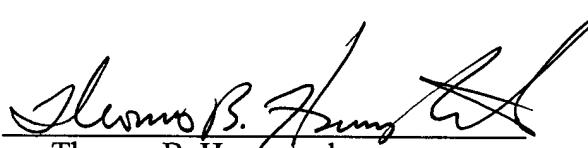
All of the claim limitations and new claims added by the above amendments find support throughout the Specification. For example, the limitation added to the claims 1 and 10—by maintaining within a selected range a difference between a sealing force and a force generated within the processing volume—is supported at page 29, lines 19-24, and page 30, line 27, to page 31, line 5, and at page 31, lines 21-22. The new claims 19 and 20 find support here, too. The new claim 17 recites a limitation, a non-linear relationship between the sealing pressure and the pressure generated within the processing volume, recited in the original claim 1 and at page 27, lines 20-22. The new claim 18 finds support at page 30, lines 22-24. The new claim 21 finds support at, for example, page 29, line 24, to page 30, line 1, and also in the original claim 11. The new claim 22 finds support in the original claim 1 and at page 26, line 20.

Conclusion

The Applicant believes that claims 1- 10 and 17-22 are in condition for allowance, and allowance at an early date would be appreciated. If the Examiner believes that a telephone conference would expedite prosecution of this application, he is encouraged to call the undersigned at (408) 530-9700.

Respectfully submitted,
HAVERSTOCK & OWENS LLP

Dated: 11 - 4 - 05

By: 
Thomas B. Haverstock
Reg. No.: 32,571
Attorneys for Applicant

CERTIFICATE OF MAILING (37 CFR§ 1.8(a))

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